

equality of all human beings. Thus the Indian religious philosophy and social thought imbibed the very essence of Arab renaissance and learning.

Another significant contribution of Arabic to the cultural heritage of India is evident from the fact that it was mainly through his language that the ancient intellectual legacy of this country was preserved, enriched and made known to the outside world, because preservation of a nation's legacy and its transmission from the standpoint of history of culture is no less essential than origination (15). The names of al-Fazari, al-Kindi, al-Khwarizmi and al-Biruni are well-known in history for bringing about a lively intellectual interchange between what the Indians and the Arabs possessed in different branches of knowledge and learning.

The Arabs were the first to add glory to India by discovering, preserving and transmitting to the West its achievements in various branches of knowledge, especially in the fields of mathematics and astronomy, in which it is credited with having made original contributions. The Arabs first studied and translated into Arabic Siddhanta, a treatise on astronomy in Sanskrit, as a result of which a systematic study of the stars was undertaken by them. The translation was done by Muhammad bin Ibrahim al-Fazari (between 796 and 800 A.D.). He subsequently came to be regarded as the first Muslim astronomer (16).

They also discovered and learned from this book the use of Indian numerals including the zero. The first Arab exponent of the Indian numerals was Muhammad bin Musa al-Khwarizmi. In 813 A.D. he used these numerals in his astronomical tables; and in about 825 A.D. he wrote a separate treatise known in its Latin form as *Algorithmi de numero Indorum* - i.e. Al-Khwarizmi on the Numerals of the Indians (17). When these numerals were introduced in Europe by the Arabs, they were taken as Arabic numerals. But it speaks of the intellectual ho-

nesty of the Arabs that they always referred to them as Indian numerals. It is the same numerals, which when introduced in Europe, marked the beginning of modern European mathematics and brought about a revolution in the science of calculation.

Another important Sanskrit book which was translated into Arabic was *Aryabhatiya* by Aryabhatta (18), the celebrated Indian mathematician who maintained that the earth rotated round its axis, and explained the cause of the eclipse of the sun and the moon (19).

It may also be claimed that the Arabs not only preserved and transmitted the Indian legacy, but also enriched it with fresh contributions of their own, as they did not come to India empty-handed. They brought with them a great deal of wisdom and skill which they had acquired from the Greeks. They, therefore, soon surpassed the Hindus in various sciences, whose disciples they had formerly been. For instance, al-Kindi, who in the ninth century A.D. had written largely upon Indian astronomy and arithmetic, now in turn became an authority in the eyes of the Hindus, who studied and translated his writings and those of his successors (20). The influence of the Arabs on Indian astronomy may be assessed from the fact that the Indian astronomers took from them a number of technical terms, their methods of calculation of latitudes and longitudes and in horoscopy a whole branch called Tajik.

In the field of medicine both the Indians and the Arabs were benefited from each other's knowledge. The famous Indian medical works like *Sharak Sanhita* and *Sushrut Sanhita* were translated into Arabic (21). A number of eminent Indian physicians like Mankah, Salih, Shanaq and Kanakah etc. were invited by Caliph Harun al-Rashid to organise hospitals and medical schools in Baghdad (22). But, as in the case of other sciences, in Medicine also the Arabs were not only the borrowers, but also the givers. The best example of the Arab legacy to India in Medicine, is the Unani Tibb

A. D. Baba Riham came to Broach from Baghdad with a company of Derwishes (9).

Similarly after the military campaigns of Mahmūd of Ghaznah (1001-1024) a large number of learned men were attracted to India. Of them the name of al-Birūni is the most illustrious. Other eminent scholars and saints who came to settle here were 'Ali bin 'Uthman al-Hajwiri, author of *كُشْفُ الْمَحْجُوبِ* (kashf-ul-mahjub), who came from Ghaznah and settled in Lahore where he died in 465 or 469 A. H. ; Shaikh Fariduddin 'Attar, the celebrated author of *تَذْكِرَةُ الْأَوْلِيَاءِ* (tazkirat-ul-Awliya), who visited India in the twelfth century A. D. ; khwaja Mu'inuddin Chishti, who breathed his last at Ajmer in 1234 A.D. ; Sayyid Shah Mir, son of 'Abdul-Qadir Jilani ; Outbuddin Bakhtiyar Kaki, whose name is associated with Qutub Minar of Delhi ; Baha'uddin Zakariya (d. 1266 A. D.) and many others (10).

The Muslim saints and sufis found the atmosphere for their preachings and activities in India very congenial. They lived in close contact with the masses and greatly influenced them by the spell of their spiritual power. They drew adherents from all communities and classes of people in large numbers. They were honoured and held in high esteem by both the rulers and ordinary men. For instance, Sultan Shamsuddin Iltutmish, who ruled in India in the seventh century A. H., used to visit Shaikh Bakhtiyar Kaki and seek his blessings by massaging his feet (11). In this way Islam spread throughout the length and breadth of the country more through the personal contacts and sacred influence of these Muslim saints and sufis than through Muslim political influence ; and in course of time Islam contributed immensely to the mainstream of Indian culture. In all this Arabic, "being the language of the Court and the Church (i.e. the religion of Islam), of Law and Commerce, of Diplomacy and Literature and Science" (12), naturally played a vital role.

Although the most significant contribution

of the Arabs and their literature to the cultural heritage of India belongs to the period between the eighth and the middle of the thirteenth centuries when Arabic was the lingua-franca of the whole Muslim world, nevertheless their culture continued to exert its influence on the social, cultural and intellectual life of this country even during the reigns of the non-Arab Muslim rulers, because Arabic, being the language of the Quran, is inseparably interwoven with Islam. Muslim children are taught to recite the Book in its original, irrespective of the fact whether they understand the language or not. "in addition to this", as E. G. Browne says, "The prayers which every good Muslim should recite five times a day are in Arabic as are the Confession of Faith and other religious formulæ which are constantly on the tongue of the true believer, be he Persian, Turk, Indian, Afghan or Malay ; so that every Muslim must have some slight acquaintance with the Arabic language, while nothing so greatly raises him in the eyes of his fellows as a more profound knowledge of the sacred tongue of Islam." (13). Because of this exalted position which Arabic continues to occupy in the hearts of the Muslims even the non-Arab Muslim rulers of India continued to encourage and patronize the study of Arabic along with that of Persian which was the official language of Muslim India.

The first direct influence of Arab thought on the cultural growth of India is evident in a number of changes that took place on the social and religious structure of the country. At the time of the advent of the Muslims, the Hindu society was divided into rigid strata of castes and people were dissatisfied with the social order and religious system of that age. But the Islamic outlook upon social life was democratic and its influence quickened in Hinduism the feeling of social justice and brotherhood (14). Similarly, Arab monotheism left a deep impression upon the Indian Bhakti movement which preached the unity of God and

This clearly shows that India must have had a highly developed technology of tempering steel in ancient times. Besides, the Arabs imported from India cloths, shoes, indigo, muslins, ivory, coconuts, sandal, camphor, cardamom, pepper and other spices. As for the main commodities which the Arabs brought to India included iron, gold, silver, lead, wine, rose-water, saffron, date, horses etc. (5).

In this way the Arabs played an important role in trading in Indian commodities with the West. One of the significant results of these Indo-Arab commercial relations was that the Indians and their kings had great regards for these Arab traders, whose trading activities brought them a great deal of wealth which undoubtedly had its share in the flourishing of Indian culture in ancient times. Another direct impact of these relations was that the Arab merchants had made their permanent settlements on the Malabar coast and in the nearby areas which played a laudable role in the diffusion of Arab culture in this country.

The advent of Islam in India marks the emergence of a new epoch in the history of its cultural evolution. And the early Arab traders were the first to carry with them the message of Islam to this country, much earlier than the establishment of the Arab colony in Sind in 712 A.D. They built their houses and mosques and practised their religious rites freely. It was mainly through these traders that a constant stream of Muhammadan influence flowed in upon the Western Coast of India. They, being honest and ideal Muslims, greatly influenced the local people by their pious living, their zeal for the new faith and the principle of universal brotherhood which they preached and practised. They even inter-married giving rise to such communities as the Kokani Muslims of Bombay and Moplas of Malabar. Moreover, they were welcomed and honoured by the local rulers as well as their subjects. The Arab historians are full of praise for the cordial relations which existed between these Arab settlers and the Indian rulers. For exam-

ple, the famous Arab historian, al-Mas'ûdi, paid a high tribute to Raja Bahari (the ruler of Gujarat) for the just and generous treatment meted out to the Muslims. He says :

"There is none among the rulers of Sind and Hind who in his territory respects the Muslims like Raja Bahari. In his territory Islam is honoured and protected. And for them mosques and congregational mosques, which are always full, have been built for offering prayers five times. Every one of these kings rules for fifty years or more. It is the general belief of the people of his kingdom that the lives of these kings are very long, because they administer justice and honour the Muslims" (6).

The establishment of the Arab rule in Sind and southern Punjab which lasted for about three hundred years (712-1000) further strengthened commercial and cultural contacts between India and the Arab world. The natives were very much impressed by the just and efficient administration as well as religion of the Arab rulers. They embraced Islam en masse, and thus the territory was for ever Islamized. They not only adopted Arabic script, but also took to learn the language of the Quran so diligently that they soon began to understand and speak it. This is evident from the statement of the famous Arab traveller, Ibn Hawqal, who visited Sind in the second quarter of the third century A.H. He has stated that Arabic and Sindhi were the spoken languages of Sind and were generally understood. Therefore, during his stay there, he had no difficulty in making himself intelligible to the natives (7).

Another important source, through which Islam entered into the hearts of the Indian masses was that of the sufis and saints, who moved wherever the Muslim army settled. Abû Hafs, a Traditionist, is said to have been the first Muslim saint and scholar who came to Sind where he died in 160 A.H. (8). In the tenth century A.D. al-Hallaj made a voyage to India and went overland by way of northern India and Turkestan. In the eleventh century

CONTRIBUTION OF ARABIC TO THE CULTURAL HERITAGE OF INDIA

by : Abdul Ali
INDIA

With the rise of Islam the Arabs became united and emerged as a powerful nation. Within a century after their rise, they became the masters of an empire which extended from the shores of the Atlantic Ocean to the confines of China, an empire greater than that of Rome at its zenith (1).

It was not only an empire which the Arabs built but also a culture. Inspired by the Verses of the Quran and Traditions of Prophet Muhammad (may peace of Allāh be on him) and filled with the spirit of scientific enquiry, they travelled far and wide in search of knowledge (2). They proved painstaking scholars and generous teachers. Their power of observation, assimilation and creative imagination manifested itself in their cultivation of various sciences. They not only preserved the ancient sciences and intellectual legacies of Greece, Iran and India, but made contributions of their own in all branches of human knowledge and learning. As a result, they became the harbingers of the modern scientific investigation. While doing so, they have left their deep mark on all the peoples and cultures of the world; and India is no exception to this. This paper attempts at making an assessment of the part played by the Arabs and their language in preserving and enriching the Indian culture.

The Arab contribution to the commercial prosperity of India may be said to have started

from the very ancient times in the pre-Islamic period, when they, by virtue of being good navigators and enterprising traders, acted as commercial intermediaries between the East and the West. It was mainly through them that Egypt, Syria and the Levantine countries received the Indian and Chinese products like silk, spices, ivory, gems and rare animals etc. And as R. A. Nicholson has observed, "Sea-traffic between the ports of East Arabia and India was very early established, and Indian products, specially spices and rare animals (apes and peacocks) were conveyed to the coast of Oman. Thence apparently even in the tenth century B. C. they went overland to the Arabian Gulf, where they were shipped to Egypt for the use of Pharaohs and grandees." (3).

Here it is remarkable to note that the Indian commodities in those days were highly prized in foreign markets. For example, the swords manufactured in India became proverbial in Arabia. In the following lines Tarafah bin al-'Abd, a renowned pre-Islamic poet prides himself on being in possession of an Indian sword :

وَأَلَيْتَ لَا يَنْفَكُ كَسْحِي بَطَانَةَ
لِعَضْبِ رَقِيقِ الشَّرْتَيْنِ مَهْدًا (4)

(I have sworn that a sharp double-edged Indian sword will always remain suspended by my side, and that I will never part with it.)

- Labov, W. 1972a. Sociolinguistic patterns. Philadelphia: University of Pennsylvania Press.
- _____ 1972b. Language in the inner city: studies in the Black English vernacular. Philadelphia: University of Pennsylvania Press.
- _____ 1966. The social stratification of English in New York City. Washington, D.C.: Center for Applied Linguistics.
- Lakhdar-Ghazal, A. 1976. Fi qada:ya-l-lugha-l-Carabiyya wa mustawatt-ta^Cli:m al-Carabi. Rabat.
- Mahmoud, Y. 1977. Arabic after diglossia. Georgetown University. Unpublished ms.
- Mitchel, T.F. 1962. Colloquial Arabic: the living language of Egypt. The English University Press, 11-13.
- _____ 1978. Educated spoken Arabic in Egypt and the Levant, with special reference to participle and tense. Journal of Linguistics, vol. 14, No. 2. 227-58.
- Rousseau, P. and D. Sankoff. 1978. Advances in variable rule methodology. In: Linguistic variation: models and methods. New York: Academic Press. 57-69.
- Sankoff, D. and W. Labov. 1979. On the use of variable rules. Language in Society, vol. 8, No. 2. 189-222.
- as-Siba:ci, Y. 1960. Nadia. Cairo: al-Khaniji.
- Wolfram, W. and R.W. Fasold. 1974. The study of social dialects in American English. Englewood Cliffs: Prentice Hall.

REFERENCES

- Abdel-Masih, E.T. 1975. A sample lexicon of pan Arabic. Ann Arbor: The University of Michigan Press.
- Badawi, S.M. 1973. Mustawayat al Carabiyya al muCa:sira fi misr. (Levels of contemporary Arabic in Egypt.) Cairo: Dar al MaCa:rif.
- Bailey, C.J. 1973. Variation and linguistic theory. Washington, D.C.: Center for Applied Linguistics.
- _____ and R. Shuy (eds.) 1973. New ways of analyzing variation in English. Washington, D.C.: Georgetown University Press.
- Bickerton, D. 1971. Inherent variability and variable rules. Foundations of language, vol. 7. 457-92.
- Bishai, W. 1966. Modern inter-Arabic. Journal of the Oriental Society, vol. 86, No. 3. 41-63.
- Bishr, K. 1969. Dirasa:t fi Cilm al-lugha. (Studies in linguistics.) Cairo: Dar al MaCa:rif.
- Blanc, H. 1960. Style variation in spoken Arabic, a sample of inter-dialectal educated conversation. In: Contributions to Arabic linguistics. Edited by C.A. Ferguson. Cambridge, MA: Harvard University Press. 81-159.
- Cantineau, J. 1960. Cours de phonétique arabe. Paris.
- Cedergren, H.J. and D. Sankoff. 1974. Variable rules: performance as a statistical reflection of competence. Language, vol. 50. 333-35.
- El-Hassan, S.A. 1978. Educated spoken Arabic in Egypt and the Levant: a critical review of diglossia and related concepts. Archivium Linguisticum, vol. 8. 112-32.
- Frayha, A. 1975. Nahwa Carabiyya muyassara. (Towards a simplified Arabic.) Beirut: Dar Aththaqa:fa.
- Ferguson, C.A. 1959. Diglossia. Word, vol. 15. 325-40.
- al-Hakim, T. 1956. As-şafaqa. Cairo: Maktabat-l-ada:b. 159-62.
- _____ 1967. Al-warṭa. Cairo: Maktabat-l-ada:b.
- Kay, P. and C.K. McDaniel. 1979. On the logic of variable rules. Language in Society, vol. 8, No. 2. 151-87.

5.0.0 CONCLUSION

In conclusion, we will try to pull together some of the points made in this paper. After an initial and sketchy reassessment of the linguistic situation in the Arab world, it is suggested that the term "diglossia" does not adequately describe the increasing interplay between the high and low forms of Arabic. We called this interplay Middle Arabic. Brief consideration was then given to the major sociolinguistic forces that were behind the emergence of this "median" form. Because of its continuum nature, Middle Arabic tends to vary considerably along many linguistic and extra-linguistic dimensions. Only internally motivated (inherent) variation was dealt with in the last part of this paper. To exemplify this inherent variation, the variable deletion of the glottal stop (Hamza) was studied through a quantitative approach. In the discussion of the results, we attempted to show that the variation of this phonological feature is rule-governed and the relative weight of each set of linguistic constraints can be quantitatively determined. In its present, fluctuating state, MA tends to be more classicized than vernacularized.

By concentrating solely on inherent variation, we realize that we overlooked the impact some extra-linguistic factors may have on the variable behavior of a certain linguistic feature (Labov 1972b, 1966). It is hoped that this study will contribute to our realization that the Arabic language like the people it must serve, is a changeable, variable medium which can no longer be ostracized from the daily concerns of the modern Arab.

Moreover, it seems that one of the overriding factors in determining the variable presence of the Hamza is the origin of the lexical item. This fact is corroborated by the crosstabulation in Table 2 where 66% of the words in which the Hamza was retained come from MSA. The table also shows that there are more retained Hamzas than deleted ones.

	Col. A	MSA
Hamza deleted	12 66.6	18 34.0
Hamza retained	6 33.3	35 66.0
Total	18	53
$\chi^2 = 5.89$	df = 1	P < .025

Table 2. Crosstabulation, variable by lexitem.

By retaining the Hamzas in most MSA forms and restoring them to some colloquial forms, the speakers in this sample are using a more classicized form of Arabic than a vernacularized one. This, one might argue, is not surprising considering the environment in which this form of Arabic is acquired and by whom. What is rather surprising, however, is that any text written in MA is equally amenable to a vernacular rendition as well as a MSA rendition without improvising any major syntactic or lexical changes. This flexibility seems to make of MA a spontaneous, comfortable medium of communication.

Factors	Probability Figures
A: (?) / V____C	0.759
L: Lexitem from Col. A	0.679
C: (?) final	0.406
B: (?) / V _i ____V _j	0.321
H: Lexitem from MSA	0.317

Table 1. Output for the deletion of the Hamza using the Varbrule II program.

Note: The data follows the prediction very closely. The least fitting environment has a Chi square of 0.421.

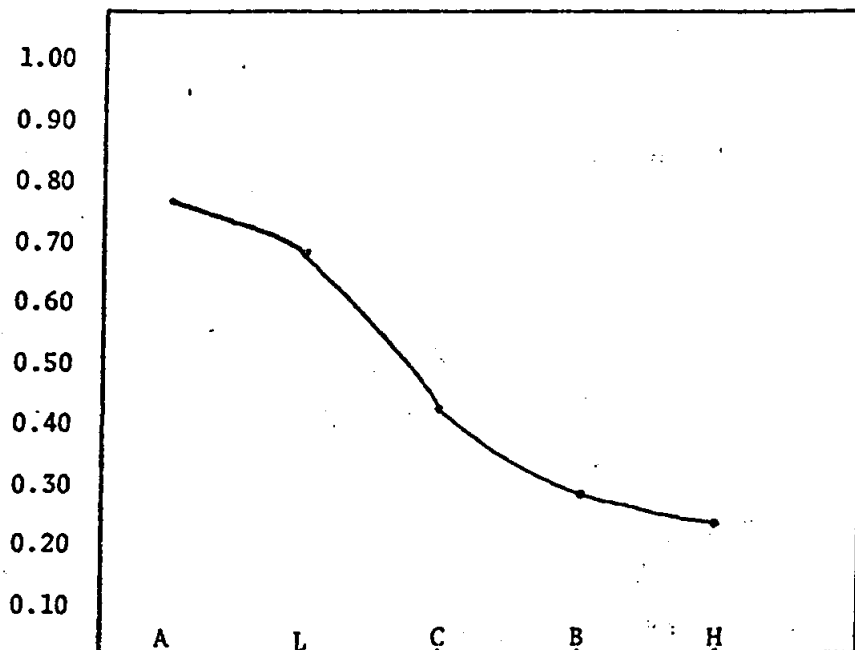


Fig. 2. Relative effect of five factors on the probability of the deletion of Hamza.

bution of each environment (i.e., set of constraints) to the operation of an optional (variable) rule.¹ The rule we are concerned with here is the variable deletion of the Hamza in the environments specified in Fig. 1. The closer to 1.00 the probability value of an environment is, the more likely it will favor the application of the rule.

5.0.0. RESULTS AND DISCUSSION

Although the grouping of some factors and the elimination of others may have skewed some of the figures, the overall results are rather significant. As the probability figures in Table 1 and the summary graph show, it is least likely for the Hamza to be deleted if the lexical item is borrowed from MSA (i.e., Factor H is the least favorable for the operation of the rule). It is most likely to be deleted if it occurs between a vowel and a consonant, (i.e. Factor A is the most favorable for the operation of the rule), and it is next most likely to be deleted if the lexical item is borrowed from colloquial Arabic (Factor L).

1. For a critical review of the use of variable rules in describing variation in language see Kay & McDaniel (1979) and Sankoff & Labov (1979).

2. For other studies of variation using quantitative approaches see in particular Bailey (1973), Bailey & Shuy (1973), Bickerton (1971), Labov (1972), and Wolfram and Fasold (1974).

The elimination of the other factors became necessary because (1) Q showed several categorical results when using the SPSS program (crosstabulation operation¹), (2) factors I and F duplicated the effects of H and L which, as it will be shown, later proved to be more predictive of the rule operation than other factors.

It is worth noting here that for factors A and B the preceding and the following environments were considered simultaneously regardless of their individual relative weight. This is done because both environments act cumulatively to determine the orthographic "seats" on which the Hamza occurs. These seats, the (?alif), the (wa:w) and the (ya:?) are not sounded unless the medial Hamza is omitted. Once omitted, the medial Hamza is "softened out" so to speak, into an [a:] as in [fa?s] → [fa:s] 'pickaxe' or into an [i:] as in [ʒi?t] → [ʒi:t] 'I came' or into an [y] as in [ʒara:ʔib] → [ʒara:yib] 'taxes' or less commonly into an [u] as in [ʒa:ʔu] → [ʒa:u] 'they came' or [u:] as in [muʔmin] → [mu:min] 'faithful'.

4.0.0 PROCEDURE

In order to assess quantitatively the variation of the Hamza in these environments, the Cedergren-Sankoff varbrule II program was used (Cedergren-Sankoff 1974; Rousseau & Sankoff 1978). This program is a statistical model that describes in probability terms the contri-

1. The SPSS (Statistical Package for the Social Sciences) is a program used to perform the most common statistical operations needed for research in the social sciences.

MA Arabic spoken by Egyptians as in the words [Ca?l] 'brain' and [fa?r] 'poverty.' In both instances the Hamza is rarely deleted if at all. Its omission would change the meaning of the lexical item radically.

3.2.3 The Constraints. The constraints that govern the variable deletion of the medial and final Hamzas were originally grouped under eight factors or environments:

- A: the Hamza occurring between a vowel (V) and a consonant (C),
- B: occurring between two non-identical vowels,
- C: occurring finally,
- Q: occurring finally but preceding a pause,
- H: the lexical item where the Hamza occurs comes from MSA,
- L: the lexical item comes from colloquial Arabic,
- I: occurring in informal speech,
- F: occurring in formal speech.

As Fig. 1 shows, only five factors were retained, later grouped under two factor groups, I and II.

<u>Factor Group I</u>	
A:	(?)-----(\emptyset) / V____C
B:	(?)-----(\emptyset) / V _i ____V _j
C:	(?)-----(\emptyset) / ____#
<u>Factor Group II</u>	
H:	Lexical item from MSA.
L:	Lexical item from Colloquial Arabic.

Fig. 1. Phonological & lexical constraints governing the variable deletion of the Hamza.

speeches by national leaders of Tunisia, Morocco, and Egypt. The range of subjects is just as varied as in the first series.

3.2.0 The Glottal Stop as a Variable

3.2.1 Why the Glottal Stop? The glottal, which we will henceforth call by its Arabic name Hamza, has been one of the most disputed features of Arabic phonology ever since its belated addition to Arabic orthography in the eighth century A.D. It was chosen here mainly for two reasons:

(a) It brings out the variation that existed long before the standardization of the Arabic language as we know it today. More specifically, it portrays, to my mind, the kind of variation that characterizes MA in its present, fluctuating form (Bishr, 1969: 41-63).

(b) The Hamza has acquired a certain prestige through its consistent use in Qur'anic texts and recitation as well as in literary texts. Hence its use by the educated as a classicizing device to signal a switch from one register to another. Thus it was felt here that a study of its inherent variation would enable us to chart the flow of MA and perhaps identify its role in an increasingly unstable diglossic situation.

3.2.2 The Variable. In this study only the medial and final Hamzas were dealt with. In the medial instances two kinds were discarded: (1) the one that occurs between two identical vowels as in [saʔala] 'to ask' or [raʔasa] 'to head, preside'; (2) the other is the variant of the voiceless uvular stop [q] as commonly encountered in the

using them simply because placing them accurately requires an active command of the rules of grammar which only a few of them possess.

Example: ḥaṣala-ṛ-ra:gil ∅ ʕala ruxṣat ∅ ṣayd ∅

'the man obtained a hunting license'

(The symbol ∅ marks the absence of the case ending. Note that the morpheme 'ra:gil' 'man' appears in its colloquial form where the [ʒ] in the MA spoken by Egyptians turns into [g].) Another feature that characterizes this level is the use of the unmarked colloquial form of the relative pronoun (?illi) for the MSA form which takes different shapes according to the gender and number of the antecedent. A further example is the placing of the demonstrative pronoun after the noun rather than before as in the case of MSA.

Most of the studies mentioned above dealt with the subject of MA mainly from a descriptive point of view except perhaps for the studies of Badawi (1973), H. Blanc (1960), and Mitchell (1978). These scholars have attempted to look at MA as a medium of many layers which varies according to linguistic and extralinguistic parameters.

3.0.0 METHOD

3.1.0 The Subjects and the Data

The transcribed data for this study comes chiefly from two sources. The first is a series of interviews conducted in Tunisia and the United States. The subjects were eight educated Arab adult males from Syria, Tunisia, Egypt, and Jordan. The topics discussed ranged from sports to business administration. The second source is a set of recordings of TV and radio broadcasts of parliamentary debates, of

2.1.0 The Phonological Level

The most common features at this level are:

- (a) the variable dropping of the glottal stop when it occurs medially and finally, as will be discussed later,
- (b) the use of [g] or [ʔ] as in [qamar]→[gamar] or [ʔamar] 'moon'
- (c) the diphthongs [ay] and [aw] are often realized as [i:]/[ɛ] and [u:]/[ɔ] respectively as in [bixayr]→[bixi:r] 'I'm fine'; [yawm]→[yu:m] or [yɔ:m] 'day', etc.

2.2.0 The Morphological Level

Just by way of exemplification we will confine ourselves to verb conjugation. Quite often at this level, verbs reflect the morphological rules that are in operation in the vernaculars. Thus the distinction between the dual and the plural forms of verbs, commonly found in MSA, is missing. So is the distinction between feminine plural and masculine plural in the present indicative. When only the latter form is used the indicative suffix is usually deleted as in:

[yarḥalu:na] (MSA) → [yarḥalu] 'they move away.'

Also omitted is the morpheme that distinguishes second person masculine from feminine in the present indicative and the imperative.

2.3.0 The Syntactic Level

It is perhaps at this level that the influence of colloquial Arabic is the most felt. All the words commonly borrowed from MSA are used in their pausal form, i.e., without case endings (i^cra:b). Contextual clues and the fixed order of the Arabic sentence constituents have rendered these markings superfluous. Even the most educated avoid

on the one hand and the media on the other have reinforced its viability as a bridge between the high and low forms of Arabic. This mediating role seems to be a factor in the destabilizing of diglossia and thus a precursor of inevitable language change (Mahmoud 1977).

2.0.0 THE LINGUISTIC CHARACTERISTICS OF MIDDLE ARABIC

MA is a linguistic amalgam, a continuum whose outer limits are the high and low forms of the diglossic spectrum. Its closeness to one pole as opposed to the other is governed by such variables as the educational, geographical backgrounds of the speakers/hearers, the topic discussed and the speech situation. Although MA is spoken mainly by the educated, it is understood by the majority of speakers in the Arabic speech community. The more educated the speaker is, the wider are the choices of subjects discussed and the more spontaneous and fluent his use of the language becomes.

Lexically, MA tends to draw heavily on the literary and technical terms available in MSA, but it incorporates some elements that proved serviceable in the vernacular of the speaker. Most importantly what characterizes this so-called MA is the occurrence of some linguistic features that are by and large characteristic of the spoken language. These features are encountered at (1) the phonological level, (2) the morphological level, and (3) the syntactic level.

1.00 THE EMERGENCE OF MIDDLE ARABIC

Varied and complex sociolinguistic factors have contributed to the emergence of MA. Briefly stated, MA grew out of the pressing need for a medium adequate and spontaneous enough to express the modern concerns and realities of the educated Arabs. For a long time these Arabs have felt that the vernacular was not equipped to cope with the educational and technical trends that were shaping their daily lives. Modern Standard Arabic (MSA), though increasingly adequate through intensive modernization efforts, was felt to be too artificial and inflexible by the few who could speak faultlessly. This uneasiness, this communicative tension led many Arab writers and journalists to advocate a new form which combines both MSA and the vernacular. Among the most vocal of these promoters was Ahmed Luṭfi As-Sayyid who, from the beginning of the century was predicating the idea of a 'new language.' In one of the editorials of his paper Al-Jarida (1913) he wrote:

We want to raise the language of the general public towards the level of the written language and to simplify the necessary elements of the written language and thus bring it closer to the level of daily discourse.

Many novelists and playwrights tried to follow this mode in their writings. Farah Anton (1913), Taoufiq al-Ḥakim (1956, 1967), and Yusif as-Sibaḥi (1960) are only a few of them.

With the massive spread of education throughout the Arab world, and the increase of pan-Arab professional and political meetings, this 'third language' as al-Ḥakim called it, has gradually gained 'droit de cité' as a functional, flexible medium. Its extensive use by Arab leaders

thirty years heated debates in the Academies of the Arabic Language throughout the Arab world.

While the effects of diglossia are still felt, the phenomenon itself is not as stable as it appears to be, or as others have claimed it to be. In fact, the high-low dichotomy has increasingly come under attack by those who study language as a variable, flexible medium rather than an unchangeable norm (El-Hassan 1978, Mitchell 1978).

Over the past twenty years or so, there has been emerging a new form of Arabic which is neither low nor high, commonly known as Middle Arabic (^cArabiyya Wusṭa). In the sparse literature that has been written on the subject, it has been referred to as 'pan-Arabic' by Mitchell (1962) and Abdel-Masih (1975), 'Modern Inter-Arabic' by Bishai (1966), 'Educated Spoken Arabic' by Badawi (1973) and El-Hassan (1978) among others.

The object of this paper is threefold: first, to review some of the sociolinguistic factors which have contributed to the emergence of Middle Arabic and to its development; second, to present some of the linguistic characteristics of this medium; and third, to show through a quantitative study of the variation of the glottal stop /ʔ/, that this so-called Middle Arabic (MA) tends to be more classicized than vernacularized.

THE GLOTTAL STOP /ʔ/ IN MIDDLE ARABIC :
A STUDY IN LANGUAGE VARIATION *

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0.0 INTRODUCTION

For a long time the linguistic situation in the Arab world has been characterized as diglossic. Diglossia as discussed by Charles Ferguson (1951) is a stable linguistic phenomenon that prevails in speech communities in which a "high" and a "low" form of the same language are used side by side, each with a clearly defined role. The two functionally differentiated forms of Arabic have been traditionally labelled Classical Arabic (known in its present form as Modern Standard Arabic) and colloquial Arabic. Many a linguist has deplored this dichotomy. For the Lebanese 'Anis Frayha (1955) to name only one, these two forms of Arabic are essentially two languages representing two distinct selves:

We think, speak, sing, murmur our prayer, talk kindly to our children, whisper to our beloved, seek understanding with whoever we want to, and insult those whom we see fit to, in a flowery and smooth language which does not retard thinking nor require much effort. But when we assume a formal position, in the capacity of a teacher, preacher, lawyer, broadcast announcer, or a lecturer, we have to attire ourselves with another linguistic personality, and we have to talk in a language with difficult vowel endings and with rigid rules in its constructions and expressions.

Although Frayha's claim may sound somewhat exaggerated now that over two decades have gone by, it is undeniable that diglossia has had many serious consequences both educationally and culturally, especially in the Arab countries where the Arabic language is in direct competition with a foreign language (Lakhdar 1975). This phenomenon has engendered in the last

*This is an expanded version of a paper presented at the Annual N-WAVE Conference, Georgetown University, Washington, DC, November 4, 1978.

References:

- Chomsky, Noam and Morris Halle: The Sound Pattern of English.
New York: Harper and Row Publishers, 1968.
- Goyvaerts, Didier L.: Aspects of Post-SPE Phonology.
Ghent-Antwerp-Brussels: E. Story-Scientia P.V.B.A, 1978.
- Ibn Ahmad, Al-Khalil (8th Century A.D.): Kitāb al-'Ain. Vol. I.
Edited by Abdalla Abdel-Fattāh Darwish. Baghdad:
al-'Āni Press, 1967.
- Ibn Jinni, Abu al-Fath 'Uthmān (10th Century A.D.): Sirr Sinā'at
al-I'rāb. Vol. I. Edited by Muṣṭafa al-Saqqā, et al.
Cairo: Muṣṭafa al-Ḥalabī Press, 1954.
- Jakobson, Roman, C. Gunnar M. Fant and Morris Halle: Preliminaries
to Speech Analysis: The Distinctive Features and their
Correlates. Cambridge, Mass.: The M.I.T. Press, 11th
Printing, 1976.
- Jakobson, Roman and Morris Halle: Fundamental of Language.
The Hague: Mouton, 1956.
- Omar, Ahmad Mukhtār: Al-Baḥṭh al-Lughawī 'Ind al-Ḥunūd.
The Indian Linguistics and its Influence on Early Arabic
Linguistics. Beirut: Dār al-Thaqāfah, 1972.
- Sibawaihi, Abu Bishr 'Amr (8th Century A.D.): Al-Kitāb. Vol. II.
Reprint of BULĀq Edition. Baghdad: al-Muthanna Press,
c. 1968.

(into German) in the West. His "Bāb-ul-Idgham" is nothing but a chapter on Arabic phonetics. His contribution reflects the painstaking effort made through his clever observations, his effort in gathering and arranging the material, and above all his effort to state his ideas clearly and concisely. It is high time to appreciate more fully the achievement made by this scholar. Not only because he is an Arab phonetician, and not only because he is a Muslim sage, but also because he is one of the early human thinkers and scholars. It is the task of modern Arab linguists and phoneticians to co-ordinate their efforts in order to understand the man and his work more fully and to spread and further the knowledge of this man through his work among a wider audience in a more acceptable and interesting presentation.

Footnotes

- (1) Where phonetic transcription is needed, I have used those symbols of the International Phonetic Alphabet (IPA) as given in the table at the beginning of this paper. I have also employed in the transcription of names and Arabic phonetic terms the following symbols:
- (The macron) above the vowel denotes the vowel length. Thus ā is the long counterpart of the short vowel a.
 - The raised coma stands for the consonant "ع".
 - The dot below h renders it a pharyngeal consonant. When the dot is below s, t, d, z, it denotes velarization or emphaticness.
 - ! The apostrophe stands for the Glottal stop, i.e. hamza.
- (2) I am sure that the arrangement given above by Sibawaihi is an error on the part of the early scribes. In a later statement, Sibawaihi orders q before k in terms of point of articulation. For this see p. 5 in this article.
- (3) This paper was supported by a grant from the University of Riyadh, during my Sabbatical year 1980/1981.

Sibawaihi's contribution to Arabic phonetics cannot be ignored by any researcher in this field. Nor can it be overlooked by the historians of linguistics who are interested in the development of this science in all parts of the world. Unfortunately, this early Arab phonetician has been misquoted and his ideas have been misinterpreted by later scholars in the East and the West. In passing I must refer to a work by a German scholar, A. Schaade, who, to my mind, wrote the most comprehensive work on Sibawaihi's phonetics. His study is entitled *Sibawaihi's Lautlehre*, published in Leiden in 1911, in about 100 pp.

It is also unfortunate that Arabic phonetics (not *Tajwīd*) is still in its infancy, and has not changed in a significant way from its traditional form. It is still an academic subject in many Arab countries. Sibawaihi's phonetics is still the main source for modern Arabic phonetics, it feeds it with its rich terminology, its ideas, and its methodology. Arabic phonetics can be applied in various ways in order to make us aware of this social phenomenon, speech. The pronunciation of Arabic, especially classical or standard Arabic, can be taught to school children and pupils; it can be taught to non-Arabic speaking people so that they will be able to speak Arabic like the Arabs; and it can be taught to students of speech, theatre, and public speakers in order to train them how to control their breath and articulate sounds properly and more effectively. One of the tasks of Arabic phonetics is to devise written symbols for all the possible sounds in Arabic. We have noted that Sibawaihi mentions a number of sounds which have no corresponding written symbols.

This is Sibawaihi, the phonetician. I have tried to give a simple, but comprehensive, picture of this Muslim scholar who for centuries has been the leading figure in the study of Arabic grammar. His work was first published and first translated

- Secondly: He follows a framework which is based on "feature analysis". By doing so, he seems to have anticipated the most recent technique of feature analysis as proposed by Jakobson, Fant and Halle and later developed by Chomsky and Halle in their monumental work "Sound Pattern of English".
- Thirdly: In addition to the valuable phonetic information given in al-Kitāb, Sibawaihi keeps closely to a certain methodological plan. He uses the phonetic terminology or vocabulary with a striking degree of consistency and clarity. Further, whenever possible he uses the phonetically ascending order of sounds.
- Fourthly: Sibawaihi has laid down the phonetic rules which deal with the sound pattern of Arabic. One can find in his book a number of statements regarding the phonotactic arrangements of Arabic sounds, and the morphophonemic alternations that occur in the language.
- Fifthly: Apart from the many advantages and merits which characterize Sibawaihi's analysis of Arabic sounds, little is said about the short vowels in a systematic way. Moreover, he overlooks some of the most important prosodic features such as stress, pitch and intonation.

"stress". In his Sirr al-Şinā'ah, he presents a more systematic treatment of the short vowels; he also explicitly discusses some phonetic features which are either untouched by Sibawaihi or given a very cursory treatment.

Sibawaihi is a good observer. Lacking the more sophisticated techniques and modern technology, he depends solely upon his natural senses. Whenever necessary he makes use of these tools for experimentation. He is aware of the fact that in Arabic speech the pulmonic air escapes either from the mouth (orally) or from the nose (nasally). To make sure that n and m are nasals, he suggests this test:

"As for n and m, they are articulated in the mouth but have nasal resonance (yunnah). As a proof, hold your nose and try to utter them. You will not be able to do so (al-kitāb, II, p. 405)."

A similar statement is also made on p. 406 in the same volume. Other phonetic tests on Arabic are found scattered elsewhere. They merit a closer study in a separate article.

Conclusions

To recapitulate, the following points are noted.

Firstly: Sibawaihi gives a fairly accurate description of the Arabic sounds, both standard and colloquial. Although he does not mention vocal cords, he seems to be aware of the effect they produce on the ears; hence the division of sounds into Majhu:r and Mahmu:s.

The phenomenon of Deletion Ḥaḍf is also one of the morphophonemic operations. In this regard Sibawaihi makes a number of statements one of which reads:

"In the case of a succession of two t's as in tatakallamu:n ... one has the choice of maintaining it in speech or eliding one of them (ibid., p. 425)."

This statement can be stated in this formula:

ta - ∅ / # ——— ta (Opt)

The symbol "∅" indicates Deletion or zeroness; the symbol "#" stands for word-initial position; (Opt) means that this rule is applied optionally in Arabic.

After this long, though not exhaustive, survey of the phonetic conception as revealed in al-Kitāb we can make some general remarks rather briefly. Al-Kitāb remains a mine of information on Arabic grammar. Only very few, albeit the most important, concepts are discussed in this article. There remains a great number of phonetic statements which deserve further consideration and closer examination.

Although Sibawaihi generally gives a good and clear description of the consonants and vowels of Arabic, he does not mention anything which might relate to stress (accent or prominence), pitch and intonation. Later Arab phoneticians add to, and improve upon, Sibawaihi's description; though not in any significant way. In the 4th century A.H. (10th century A.D.) Abu al-Fath 'Uthmān Ibn Jinni gives a fuller and more systematic description of the Arabic sounds. I have found that he touches upon certain features in Arabic which may be grouped under the phenomenon

"n is changed into m before b... because both b and m have the same point of articulation (al-Kitāb, II, p. 414; also on p. 427)."

This statement can be formulated as follows:

$$n \rightarrow [+bilabial] / \text{---} b$$

This rule is an instruction to add the feature of Labiality to the features that compose n before the Bilabial consonant. The symbol "→" reads: "rewrite the elements on the left of the arrow as the elements given on its right", the symbol "/" means "in the context of", the symbol "—" indicates the environment in which the change occurs.

Note also the following statement:

"The Arabs say ʔijdamāʔu: in place of ʔijtamāʔu:... t is approximated to d since this is Maj. This operation applies to the pattern ʔiFtaʔaL forms (Ibid., p. 427)."

This statement can be recast in this form:

$$t \rightarrow [+Maj] / [Maj] \text{---} \quad \text{and} \quad / \text{ʔiFtaʔaL}$$

i.e., add the feature Maj to the features which constitute t after a Maj consonant. This operation is restricted to forms of ʔiFtaʔaL pattern; the rule contains two environments symbolized by "/": the first refers to the segment next to which the operation takes place, the second refers to the general pattern which normally undergoes this kind of morpho-phonemic alternation.

The implications of the use of "distinctive feature analysis" are numerous; some of which are summarized below. The system which uses "feature analysis" uses a small set of features far less in number than the set of sound units employed in the language. Thus whereas one would need more than 29 units for Arabic, one might need 10 or 12 features in order to analyse the Arabic sounds in a more economical way. Moreover, the study of sounds in terms of their feature components would lead to avoiding redundant features; Sibawaihi seems to put emphasis on the distinctive, non-redundant, features. This approach appears to underlie his analysis as can be read between the lines of the above statements and many others.

Furthermore, by using "feature analysis" one can simplify his statement of the "morphophonemic" processes in the language, such as assimilation, dissimilation, etc. It is worth noting that after his major classification of Arabic sounds, Sibawaihi made the following remark (al-Kitāb, II, pp. 406-407):

"I have described the sound units in terms of the foregoing features in order to show you the cases in which Idghām is preferable, the cases in which it is permissible, and the cases in which it is neither preferable nor permissible."

Idghām here may be regarded as a part of the morphophonemic changes in Arabic. In fact, Sibawaihi's book contains a great number of morphophonemic statements. They are simply and concisely stated. They can easily be recast in mathematical linguistic formulas, or rules. To exemplify, examine Sibawaihi's statements as shown below.

It is to be noted that the information given in the above matrix is reconstructed from the statements made by Sibawaihi. They are numerous, but we can cite some of them for illustrative purposes.

- 1) "Without ʔiṭba:q ṭ would become d, ṣ would become s, ʕ would become ʔ (al-Kitāb, II, p. 406)."
- 2) "d̄ is like ṭ in that they both are Maj; t is not Maj (=Mahmū:s)... (Ibid., p. 418)."
- 3) "d and t differ in terms of Jahr; they are both lacking ʔiṭba:q, ʔistiṭa:lah (continuantness), and takri:r (ibid., p. 418)."
- 4) "ṣ in relation to z and s is similar to ṭ in relation to d and t. ṣ in relation to s is like ṭ in relation to d; because they are both Mahmū:s. What makes them different is the presence of ʔiṭba:q in ṣ and its absence in the case of s. As for ṣ in relation to z, it is like ṭ in relation to t, because z is ʔayr mahmu:sah (=Maj)... (ibid., p. 418)."
- 5) "ḏ to ḏ̄ is like ṭ to d because they are all Maj. What distinguishes one from the other is the presence of ʔiṭba:q in the former part of the sets and its absence from the latter. ḏ to ḏ̄ is like ṭ to t (ibid., pp. 418-419)."
- 6) "z is like d in that they both are Maj and non-Muṭ..... (ibid., p. 412)."
- 7) "z is Maj and ʔayr Muṭ..... (ibid., p. 426)."
- 8) "s and ṣ are alike in terms of hams, ṣafi:r (whistling) and raxa:wah (continuantness)... (ibid., p. 428)."
- 9) "s is near to t in terms of point of articulation, and in that they both are mahmu:s... (ibid., p. 429)."

Key of abbreviations

<u>Abbreviation</u>	<u>Full term</u>	<u>Glosses</u>
maj	majhu:r	voiced
ʔay	ʔayann	nasal
mam	mamdu:d	long
ʃad	ʃadi:d	non-continuant
mun	munʔarif	lateral
muk	mukarrar	rolled
mut	mutbaq	emphatic

The sounds which are characterized by Sibawaihi in a different way from the modern one will be inserted between parentheses to differentiate them from the rest of the sounds.

In the following table we shall display the phonetic features recognized in al-Kitāb, and their specification with regard to the sounds discussed therein. In my opinion, the main features given in this book are seven: jahr, yunnah (nasality), madd (length), fiddah (total restriction or stoppage), zinħira:f (laterality), takri:r (trilling), ziṭba:q (velarization, emphasis). As for the first feature, the sound which is positively specified with regard to jahr is called majhū:r, the one negatively specified with regard to this feature is called Yayr majhu:r or mahmu:s. As regards yunnah, the nasal are called fi:hi Yunnah (ʔayann is the term used by later phonetician Ibn Jinni) the non nasals are described as laysa fi:hi yunnah (al-Kitāb, II, p. 416). As for madd, only a:, i:, and u: are referred to as ħuru:f madd wa li:n (we call them Mamdu:d), the rest are "laysat ħurui madd" (ibid. p. 409). Regarding fiddah the non continuant sounds are termed as fadi:dah, the continuant ones are called Yayr fadi:dah or raxwah. The lateral sound is termed munħarif, the rolled one mukarrar. Concerning ziṭba:q, the emphatic sounds are termed muṭbaqah, the non emphatic ones munfatiħah or Yayr muṭbaqah (ibid., II, 426). It appears that Sibawaihi uses terms such as mahmu:s, raxw (or rixw), munfatiħ in a negative way in contrast with the positive specifications. In the table below the sign "+" indicates the presence of the feature (positive), "-" indicates its absence (negative). The phonetic features of Arabic are represented in the form of a two-dimensional matrix in which the columns stand for independent segments; the rows stand for particular features.

Interestingly enough, this technique of analysis has something in common with one of the most recent phonetic theories which is known as "distinctive feature analysis", which is based on some sound scientific grounds drawing from concepts used in disciplines such as information theory, physics, physiology, among others. This theory puts forward the idea that there is a set of universal phonetic features from which each language selects for its own purposes. Thus voicing (entailing the vibration of the vocal cords) exists in all languages as far as we know. The theory also maintains that (Roman Jakobson and Morris Halle, Fundamental of Language, The Hague: Mouton, 1956, p. 8):

"The phonemes of a language are not sounds but merely sound features lumped together which the speakers have been trained to produce and recognize in the current of speech sounds

..... The speaker has learned to make sound-producing movements in such a way that the distinctive features are present in the sound waves, and the listener has learned to extract them from these waves.

(Ibid., p. 4) Each of the distinctive features involves a choice between two terms of an opposition that displays a specific differential property, diverging from the properties of all other oppositions.

(Ibid., p. 5) If the listener receives a message in a language he knows, he correlates it with the code at hand and this code includes all the distinctive features to be manipulated, all their admissible combinations into bundles of concurrent features termed phonemes."

It follows from this that vowels and consonants are made up of the distinctive features which are used in a given language. Thus in Arabic voicing is a feature which is found in all vowels and some consonants.